

IN THE CLAIMS

1. (currently amended) A service providing system, including, at least, a plurality of electronic appliances, a service server, a communication network, and an authentication server being connected to the communication network,

each electronic appliance being equipped with a wireless communication terminal function, being mounted in a moving body, and being assigned a unique device ID, and

the service server having a function for providing a predetermined service and storing said unique device ID for each electronic appliance to which service can be provided,

the service providing system comprising:

authentication process means for allowing a communication terminal apparatus to access a respective electronic appliance only when the communication terminal apparatus has been authenticated;

registration means for registering said unique device ID assigned to said each electronic appliance, and

transmission means for using said unique device ID to provide access to a specified service, via the communication network, from the service server to a specified electronic appliance ~~to which a specified service needs to be provided and~~ transmitting service information, which has a predetermined content for realizing the specified service, to the specified electronic appliance,

in which the communication terminal apparatus and the service server can access the electronic appliance only through the authentication server, and

in which said service information indicates update data for map information is available for the specified electronic appliance, and

wherein the transmission means transmits to the specified electronic appliance the update data for the map

information responsive to a request for the update data for the map information transmitted over the communication network by the specified electronic appliance

~~in which said each electronic appliance includes (i) a receiving device to receive global positioning satellite (GPS) radio waves, (ii) an autonomous navigation unit to obtain travel information of the respective moving body without the use of the GPS radio waves in which the autonomous navigation unit includes a gyro and a speed sensor and in which the travel information is indicative of a speed of the respective moving body and a direction in which the respective moving body is moving, and (iii) a position measuring unit to receive the GPS radio waves and the travel information and to determine a current position of the respective moving body such that the position measuring unit determines the current position of the respective moving body by use of the travel information when the GPS radio waves are not available.~~

2. (currently amended) A service providing system, including, at least, a plurality of electronic appliances, a service server, a communication network, and an authentication server being connected to the communication network,

each electronic appliance being equipped with a wireless communication terminal function, being mounted in a moving body, and being assigned a unique device ID, and

the service server having a function for providing a predetermined service and storing said unique device ID for said each electronic appliance to which services can be provided,

the service providing system comprising:

authentication process means for allowing a communication terminal apparatus to access a respective electronic appliance only when the communication terminal apparatus has been authenticated;+
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registration means for registering said unique device ID assigned to each electronic appliance;

first transmission means for providing access, via said communication network, from one of said electronic appliances to said service server and transmitting information which has a predetermined content that can be used by a specified service from said one of said electronic appliances to said service server; and

second transmission means for using said unique device ID to provide access to a specified service, via said communication network, from said service server to a specified electronic appliance ~~to which a specified service needs to be provided~~ and transmitting service information, which has a predetermined content for realizing the specified service, to the specified electronic appliance only through the authentication server,

in which the communication terminal apparatus and the service server can access the electronic appliance only through the authentication server, and

in which said service information indicates update data for map information is available for the specified electronic appliance, and

wherein the second transmission means transmits to the specified electronic appliance the update data for the map information responsive to a request for the update data for the map information transmitted over the communication network by the specified electronic appliance ~~in which said each electronic appliance includes (i) a receiving device to receive global positioning satellite (GPS) radio waves, (ii) an autonomous navigation unit to obtain travel information of the respective moving body without the use of the GPS radio waves in which the autonomous navigation unit includes a gyro and a speed sensor and in which the travel information is indicative of a speed of~~

~~the respective moving body and a direction in which the respective moving body is moving, and (iii) a position measuring unit to receive the GPS radio waves and the travel information and to determine a current position of the respective moving body such that the position measuring unit determines the current position of the respective moving body by use of the travel information when the GPS radio waves are not available.~~

3. (canceled)

4. (canceled)

5. (currently amended) A service providing system, composed of an electronic appliance, a communication network, a communication terminal apparatus, and an authentication server,

the electronic appliance being one of an electronic appliance that is mounted in a moving body and is equipped with a mobile communication terminal function and a mobile communication terminal apparatus with a fixed access path to the communication network, and the authentication server being connected to said communication network,

the service providing system comprising:

access means that enables the communication terminal apparatus to access the electronic appliance via the communication network using a device ID stored in a service server that has been assigned uniquely to the electronic appliance, the communication terminal apparatus accessing the electronic appliance only through the authentication server;

terminal ID generating means, provided on said communication network, for generating a terminal ID for said communication terminal apparatus using information that identifies said fixed access path by which said communication terminal apparatus accesses said communication network;

registration means for registering said device ID assigned to the electronic appliance;

authentication process means, provided in said authentication server, for using said terminal ID to perform an authentication process for said communication terminal apparatus that has accessed the authentication server and allowing said communication terminal apparatus to access said electronic appliance only when the communication terminal apparatus has been authenticated; and

transmission/reception means for receiving and transmitting service information, which has a predetermined content for realizing a specified service, between said communication terminal apparatus that has been authenticated by said authentication process means and said electronic appliance,

in which the service server can access the electronic appliance only through the authentication server, and

in which said service information indicates update data for map information is available for the electronic appliance, and

wherein the transmission/reception means transmits to the electronic appliance update data for the map information responsive to a request for the update data for the map information transmitted over the communication network by the electronic appliance

~~in which the electronic appliance includes (i) a receiving device to receive global positioning satellite (GPS) radio waves, (ii) an autonomous navigation unit to obtain travel information of the moving body without the use of the GPS radio waves in which the autonomous navigation unit includes a gyro and a speed sensor and in which the travel information is indicative of a speed of the respective moving body and a direction in which the respective moving body is moving, and (iii) a position measuring unit to receive the GPS radio waves~~

~~and the travel information and to determine a current position of the respective moving body such that the position measuring unit determines the current position of the respective moving body by use of the travel information when the GPS radio waves are not available.~~

6. (canceled)

7. (canceled)

8. (canceled)

9. (currently amended) A communication apparatus for controlling communication between a plurality of electronic appliances, each electronic appliance being connected to a network, being provided with a unique device ID for identifying the electronic appliance, and being capable of transmission,

the communication apparatus comprising:

communication means for communicating with another communication apparatus via said network;

storage means for storing group information in which the plurality of electronic appliances, which are permitted to communicate between themselves after the communication is authenticated, are registered as a group;

authentication process means for allowing a device to access an electronic appliance only when the respective device has been authenticated;

registration means for registering a unique device ID assigned to each electronic appliance;

a service server operable to provide service information to one or more of the electronic appliances;

judgement means for judging, based on said unique device IDs transmitted via the network before communication

commences between said plurality of electronic appliances and group information stored in said storage means, whether the communication is permitted; and

control means for having said communication means transmit a result of said judgement means to an exchange apparatus that is connected to said network and performs an exchange process for communication between electronic appliances based on the transmitted unique device Ids,

in which the respective device and the service server can access the respective electronic appliance or appliances only through an authentication server, and

in which said service information indicates update data for map information is available for the one or more of the electronic appliances, and

wherein the service server provides to the one or more of the electronic appliances the update data for the map information responsive to a request for the update data for the map information transmitted over the network by the one or more of the electronic appliances

~~in which said each electronic appliance is mountable in a moving vehicle and includes (i) a receiving device to receive global positioning satellite (GPS) radio waves, (ii) an autonomous navigation unit to obtain travel information of the moving vehicle without the use of the GPS radio waves in which the autonomous navigation unit includes a gyro and a speed sensor and in which the travel information is indicative of a speed of the respective moving body and a direction in which the respective moving body is moving, and (iii) a position measuring unit to receive the GPS radio waves and the travel information and to determine a current position of the respective moving body such that the position measuring unit determines the current position of the respective moving body by use of the travel information when the GPS radio waves are not available.~~

10. (previously presented) The communication apparatus according to Claim 9,

wherein a wireless communication is performed between said electronic appliances and the exchange apparatus.

11. (previously presented) The communication apparatus according to Claim 10,

wherein said electronic appliances are navigation apparatuses.

12. (previously presented) The communication apparatus according to Claim 10,

wherein one or more of said electronic appliances are mobile telephones.

13. (previously presented) The communication apparatus according to Claim 9,

wherein each of said electronic appliances is connected to said communication means in said exchange apparatus, and

when communicating, each of said electronic appliances transmits said unique device ID to said communication apparatus, said exchange apparatus transmits a communication means ID for specifying said communication means to said communication apparatus,

said communication apparatus authenticates said electronic appliance based on said group information, by referring to a combination of said transmitted unique device ID and said transmitted communication means ID.

14. (previously presented) The communication apparatus according to Claim 11,

wherein the group information is generated when an electronic appliance communicates with the communication apparatus via the network.

15. (previously presented) The communication apparatus according to Claim 9,

wherein the group information also includes content data that can be used by the electronic appliances which are registered in the group information.

16. (previously presented) The communication apparatus according to Claim 15,

wherein the content data is geographical data.

17. (currently amended) A service providing system operable within the Internet, said system comprising:

a navigation unit mountable in a vehicle and operable to provide navigational and positional information of the vehicle to an operator of the vehicle, said navigation unit being assigned a unique identification ID;

a service server operable to provide a predetermined service and to store said unique ID for said navigation unit to which service can be provided;

a communication network connectable to the Internet;

an authentication server operable to determine if access to the navigation unit is permissible; and

a communication terminal apparatus connectable to the navigation unit and the communication network and operable to enable information to be supplied to the navigation unit from the Internet by way of the communication network and to enable service information to be supplied to the navigation unit by use of said unique ID from the service server by way of the Internet and the communication network,

in which the communication terminal apparatus and the service server can access the navigation unit only through the authentication server, and

in which said service information indicates update data for map information is available for the navigation unit, and

wherein the service server supplies to the navigation unit update data for the map information responsive to a request for the update data for the map information transmitted over the communication network by the navigation unit

~~in which the navigation unit includes (i) a receiving device to receive global positioning satellite (GPS) radio waves, (ii) an autonomous navigation device to obtain travel information of the vehicle without the use of the GPS radio waves in which the autonomous navigation device includes a gyro and a speed sensor and in which the travel information is indicative of a speed of the respective moving body and a direction in which the respective moving body is moving, and (iii) a position measuring unit to receive the GPS radio waves and the travel information and to determine a current position of the respective moving body such that the position measuring unit determines the current position of the respective moving body by use of the travel information when the GPS radio waves are not available.~~

18. (new) A navigation device mountable in a vehicle and to which is assigned a unique identification, the navigation device comprising:

a wireless communication terminal operable to transmit and receive information over a communication network; and

a control unit including a processor, wherein the processor is operable to use service information received at the wireless communication terminal from a service providing system

to realize at the navigation device a predetermined service provided by the service providing system,

wherein the service providing system has functions for providing the predetermined service and storing the unique identification for the navigation device to which service can be provided, for allowing access to the navigation device only when the navigation device has been authenticated, for registering the unique identification assigned to the navigation device, for using said unique identification to provide access to a specified service, via the communication network, from the service providing system to the navigation device and for transmitting specified service information, which has a predetermined content for realizing the specified service, to the navigation device,

wherein said specified service information indicates update data for map information is available for the navigation device, and

wherein the update data for the map information is transmitted from the service providing system over the communication network to the navigation device responsive to a request for the update data for the map information transmitted from the wireless communication terminal over the communication network.